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Population, Resources, Environment and Development:

Putting Poor People First

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### Abstract

Normal thinking about population, resources, environment and development in the past supported direct solutions - family planning, resource management controls, conservation, and maximising economic growth - which on their own did not work very well. In the meantime, population growth and the invasion of Third World rural areas by 'core' (rich world, urban, commercial, governmental) institutions and interests, have together forced many rural people to migrate to overcrowded urban areas and fragile rural environments. To meet both the needs and priorities of the rural poor, and the concerns of outsiders with population resources, environment and development, sustainable livelihood security is an integrating concept. Secure, adequate and sustainable livelihoods for the rural poor promise to contribute to stabilising population, reducing migration, fending off core exploitation and taking the long view in resource management. Especially in resource-poor conditions, potentials and opportunities for sustainable livelihoods have been underrecognised: bioeconomic potentials are often high compared with current performance; population pressure can paradoxically provide a condition for more intensive and sustainable exploitation; professional biases have concealed and neglected opportunities for the poor which can now be explored; and some policies have impeded sustainable livelihoods.

Practical implications include: giving priority to policies for sustainable livelihoods for poor rural people in which they have secure ownership and command over resources; sponsoring and rewarding a new professionalism which puts the poor first; and evolving new methods for rural research and development in which poor people are professional partners. Population control, sustainable resource exploitation, environmental conservation, and rural development are best served by starting with the rural poor, with what they want and need. Poor rural people are not the problem but the solution. Reversing normal professionalism to put the poor first is the surest path to sustainable rural development.

Population, Resources, Environment and Development (PRED):  
Putting Poor People First

Thinking about PRED

Words used define thought, structure analysis, and influence conclusions. So 'Population', 'Resources', 'Environment' and 'Development' go with ways of thinking which point towards certain conclusions. The thesis of this note is that normal analysis which starts with these words leads all too easily to misleading prescription; that normal professional thinking about PRED has been part of the problem; that poor people, so often treated as a residual, should to the contrary be the starting point; and that both ethically and practically, putting the priorities of poor people first can achieve not only their objectives but also those of professionals and policy makers concerned with PRED.

Let us start with earlier normal ways of thinking. Population thinking started with numbers of people and how these were changing. This led to alarm at rates of population increase and at pressures on resources. The normal prescription was family planning to limit population growth. Resources thinking started with physical resources such as land, water, minerals, trees, fish and so on and how these were being exploited. This led to alarm at unsustainable exploitation. The normal prescription was controls, rehabilitation and better management. Environment thinking started with trends in physical conditions where they were changing for the worse, especially pollution, resource degradation, and loss of ecological diversity. The normal prescription was conservation. Development thinking started with economic potentials and activities, and how they could be exploited and promoted. Normal prescriptions were to maximise rates of return and economic growth.

H.L. Mencken once remarked that 'For every problem there is a solution that is simple, direct and wrong'. This applies here. The simple direct solutions which tried to solve problems of population growth directly by family planning, of resource depletion directly by controls, of environmental degradation directly by conservation, and of development directly by growth, all had some validity but all

neglected linkages, were unsubtle, and generally did not work well. All these simple direct solutions here shared the weakness of starting with physical problems rather than people, and with the concerns and values of the rich rather than those of the poor. In the light of experience, though, all have been modified to take account of the poorer in society, including the rural poor in the Third World. So population planners recognise the rationality of the large family for the poor, and see that the elimination of poverty must usually precede the adoption of family limitation. Those who start with resources and the environment recognise that poor people are often behaving rationally, and sometimes rationally in desperation, in exploiting resources and the environment in ways which are not sustainable. And development thinkers now pay much attention to questions of political economy, of who gains and who loses in processes of economic growth or decline. All the same, for all of them, the rural poor come late in processes of analysis; they are often 'last', a residual, something for the final paragraphs (see e.g. even the Brundtland Commission's otherwise admirable remarks on empowering vulnerable groups, pp 114-116). Sometimes coming last in a chapter or paragraph serves to emphasise. Sometimes, though, the poor, the remote and women are only terminal footnotes. They are not the starting point.

There are ethical reasons for putting them first. For many, that is enough in itself. But in addition, the argument of this paper is that there are also overwhelming practical reasons for putting them first, from the point of view of population, resources, environment and development.

#### The Context

The context of the interrelationships between population, resources, environment and development is well understood and not controversial. Let me outline, therefore, an overview with which most would agree. The context is the rural Third World, mainly but not only in the tropics. Three major processes are occurring. These are population growth; 'core' (urban, industrial, rich) invasions of rural environments; and responses by the rural poor.

i. population growth

Though population is not growing everywhere in the Third World (see e.g. Kampuchea, Uganda, and perhaps Afghanistan) it is the norm. In most Third World regions and countries, population has grown fast and is projected to continue to rise sharply. Table 1 gives World Bank figures which estimate that

Table 1 Estimated Population Growth in Low and Middle-Income Countries 1984-2000  
(millions)

	<u>1984</u>	<u>2000</u>	Percentage increase in <u>16 years</u>
Sub-Saharan Africa	406	665	64
India	749	994	33
China	1,029	1,245	21
Other Low-Income	328	476	45
Other Middle-Income	1,040	1,427	37
Totals	3,810	5,224	37
Totals without China	2,781	3,979	43

Source: WDR 1986:228

in the 16 years from 1984 to 2000, populations will have grown by 37 per cent in low and middle income countries as a whole, by 43 per cent if China is excluded, and by 64 per cent if Sub-Saharan Africa is taken on its own. (These figures to the best of my knowledge antedate AIDS holocaust scenarios which now make projections less secure, given many unknowns. A large-scale AIDS pandemic might not halt population growth, but could devastate pastoralism, agriculture, and welfare of the young through the removal of active adults. However most of the arguments which follow would still hold.)

ii. 'core' invasions and pressures

The second process is 'core' invasions of rural environments. The term 'core invasions' is used as shorthand for extensions into rural

areas of power, ownership and exploitation of central, urban institutions and individuals which include governments, commercial interests, and professionals who are variously wealthy, urban and powerful, and including the richer world of the North. 'Core' also reflects the bias of language and thought which makes urban areas the centre, from which other areas where the rural poor live, are 'remote'. The term 'invasion' is not meant to imply that the processes are necessarily bad; it is descriptive not normative. These core invasions take many forms. They include: the extension of infrastructure and services into rural areas; the government and commercial appropriation and exploitation of resources such as forests, ranching lands and fisheries; the acquisition of pastoralists' herds and smallholder lands. Core invasions have mixed effects, both generating and destroying livelihoods, creating conditions for population growth, and exercising pressures on the environment.

### iii. responses by the rural poor

The third process is responses of poor rural people to population growth and core invasions. Patterns vary and exceptions will be many. A useful framework for discussion is a distinction between green revolution agriculture, in areas which are generally fertile, irrigated or otherwise well watered, uniform and flat, and resource-poor agriculture in areas generally less fertile, rainfed, diverse and undulating. The discussion which follows refers mainly to resource-poor conditions, which are typical of most of Sub-Saharan Africa and the hinterlands of Asia and Latin America. In such areas, as populations grow and common property resources are appropriated, agriculture becomes more intensive, and for a time at least, less sustainable as fallows shorten and/or livestock become more numerous. Core invasions and pressures, appropriations and exclusions by government and by the urban and rural rich, declining biological productivity, and rising human populations drive many of the poorer people to migrate. This they do either seasonally or permanently, some to towns, some to areas of green revolution agriculture, and some to forests, savannahs, steep slopes, flood-prone flatlands and other vulnerable or marginal areas. In these areas they may adopt sustainable forms of cultivation and pastoralism, but more often

cannot, hindered as they are by insecure tenure, lack of appropriate technology, and poverty.

These three processes are linked in many ways, and are not sustainable. An indication of the acuteness of the crisis that can be foreseen is the misery and pressure on services implied by projections for urban growth. The Brundtland Commission estimates (WCED 1987:16) that the Third World urban population will rise from 1 billion today to one and three-quarter billion by the end of the century. Much of this increase will stem from rural to urban migration. Many millions of others will seek livelihoods in fragile environments. The policy question is then how many millions more people can be enabled to find adequate, secure, decent and sustainable livelihoods in rural areas. Sometimes, as in Indonesia, there is potential for transmigration. More generally the challenge is to see how many more people can gain such livelihoods where they are already, without having to migrate to towns or other rural areas where they so often suffer and aggravate already bad conditions for others.

#### Sustainable Livelihood Security

Sustainable livelihood security is an integrating concept here. The Report of the Advisory Panel on Food Security, Agriculture, Forestry and Environment to the World Commission on Environment and Development gave this meaning to the term:

Livelihood is defined as adequate stocks and flows of food and cash to meet basic needs. Security refers to secure ownership of, or access to, resources and income-earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long-term basis. A household may be enabled to gain sustainable livelihood security in many ways - through ownership of land, livestock or trees; rights to grazing, fishing, hunting or gathering; through stable employment with adequate remuneration; or through varied repertoires of activities.'

(Food 2000:3)

Sustainable livelihood security integrates population, resources, environment and development in four respects: stabilising population;



reducing migration; fending off core exploitation; and achieving long-term sustainable resource management.

- i. stabilising population. Only when livelihoods are secure, when children are likely to survive, and when assets can be passed on to children, does it make sense for households to limit family size (see e.g. WCED 1987:106). Family planning follows, rather than precedes, sustainable livelihoods.
- ii. reducing migration. Poor people rarely like to migrate. The suffering of migrants, whether rural (as recounted by Jan Breman (1985) a social anthropologist who accompanied rural migrants in Gujarat) or urban (as Dominique LaPierre's carefully researched 'novel' City of Joy testifies for Calcutta), is often appalling and migrants further impoverish the poor in the areas to which they move by competing for resources, services and work. When people have secure control over resources they have strong incentives to manage them so that they do not have to migrate.
- iii. fending off core exploitation. Those with secure ownership of assets, or secure rights and access to them, are often able to survive bad times without permanent impoverishment. They are better placed to resist exploitation, indebtedness, or the loss of productive assets through distress sale. It is where people are legally, politically and physically weak, and lack secure legal rights to resources, that they are most vulnerable. Fending off core exploitation or appropriation can mean that they and their children can stay where they are, and not join the ranks of those who have to migrate in desperation.
- iv. taking the long view in resource management  
Core interests tend to take a short-term view of resource exploitation. Conservationist rhetoric should not be allowed to mislead here. Governments have generally protected forests less well than communities. Corrupt politicians, forest officials and contractors are not universal, but still rather common, and have grown fat by felling, not protecting, forests. For its part, normal project appraisal by seeking to maximise the

internal rate of return also takes a short-term view, as do commercial interests concerned with profits.

In contrast, poor people with secure ownership of land, trees, livestock and other resources, where confident that they can retain the benefits of good husbandry and pass them on to their children, can be, and often are, tenacious in their retention of assets and far-sighted in their investments. The extremes of sacrifice which peasants will endure in order not to have to sell land, or not to have to cut down a fruit tree, are evidence enough. The popular stereotype of the poor as able to think only of subsistence, 'hand-to-mouth', on a daily basis applies in extreme conditions and for the ultra-poor; but once they have the chance to save and to maintain and enhance their resources, they can also show a willingness to invest effort, as tree planting on small and marginal farms in Haiti, Kenya, India and elsewhere indicates.

The implication of these four points is that poor people are the solution. But they are only the solution if their livelihoods are adequate, sustainable and above all secure.

#### Potentials and Opportunities

The potentials and opportunities for sustainable livelihoods for rural people are as immense as they are underrecognised. There are two dimensions here: bio-economic potentials, especially of resource-poor environments and agricultural systems; and professional error and neglect which has left potentials unrecognised and undeveloped.

##### i. bio-economic potentials

Not always, but more often than not, degradation protects potential for the poor. Because land is degraded - deforested, eroded, waterlogged, saline, bare from overgrazing, flooded, and so on - it has low value, especially where current management practices seem likely to persist. But again and again, when management practices are changed, considerable biological potential is revealed. This appears marked in resource-poor rainfed environments. On the Sukhomajri/Nada project in the foothills of the Himalaya, 70 hectares of eroded forest

hillside had been needed to support one head of cattle, and each hectare was 'yielding' 400 tons of silt per annum. After management reforms and grass planting, one hectare was yielding bhabbar grass for ropemaking with a potential annual income of about \$1,500 equivalent (Mishra and Sarin 1987). In the Guinope Integrated Development Program in Honduras, simple measures like small drainage ditches plus chicken manure, chemical fertiliser and/or green manure, raised maize yields three or fourfold, and induced migration into an area which had previously been exporting people to the slums of Tegucigalpa (Bunch 1987). In the Yatenga Water Harvesting Project in Northwest Burkina Faso, once farmers participated in developing conservation methods for their farms, yields rose of the order of 50 per cent, and farmers spontaneously invested much labour in improving their land (Reij 1986; Reij et al 1987). Against this background, one can consider the estimated 100 million hectares of degraded land in India, defined as land estimated to be producing less than 20 per cent of its dry-weight biological potential (Bentley 1984:1; see also CSE 1985:18). 35 million of these hectares are degraded forest land, protected by the State, and with immense potential for trees to be grown by poor people. In parts of resource-poor Sub-Saharan Africa, the exclusion of livestock from areas such as parts of Baringo District in Kenya (Bailey et al 1985) and the Kondoa area of Tanzania (Ostberg 1986), have led to dramatic improvement in biological productivity. In all these cases, earlier systems of exploitation and management depressed biological production and concealed the potential, a potential for sustainable livelihoods to be gained by the poor.

An important paradox here concerns population, resources, and sequences. With increasing population density, shifting cultivation has shortened fallows, often presenting visible degradation and erosion. This appears to be a necessary stage to go through on the way to population densities at which it becomes rational to invest much more labour per hectare in an intensive and sustainable system of cultivation with, for example, micro water harvesting, terracing, permanent agroforestry, and/or stall feeding of livestock.<sup>1</sup> Again,

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1 There may be a parallel here with the Savory system of short-duration grazing in which it is necessary to increase animal stocking rates in order to achieve ecological improvement.

then, erosion and degradation can present an opportunity, if it is seized. In the past, migration of males and of whole families to urban centres has left whole regions too short of labour for the transition. With technologies like those of Sukhomajri/Nada, Guinope and Yatenga, the opportunity is to transform the crisis of degradation into a new more productive and remunerative system which supports sustainable livelihoods not just for the present population, but for others who migrate in, and for future generations.

ii. professional biases and neglect

Professional biases have also concealed and protected potential for the poor. Normal professionals suffer many 'first' biases which are variously urban, industrial, mechanical, high technology, capital-intensive, quantifying, large-scale, and deriving from temperate climate conditions (Chambers 1983, 1986). They believe they know, and that poor rural people do not know. In consequence Third World agrarian history is littered with failed good intentions. One result is undeveloped potential. In the Yatenga example from Burkina Faso, decades of earlier soil conservation programmes failed because they expressed the top-down mechanical orientation of outsiders who built earth bunds which farmers did not like. Only when more sensitive outsiders combined with and learnt from and with farmers was a novel system of rock contour bunds and saucer scoops for each crop clump devised as a viable and popular innovation. In many resource-poor areas, breakthroughs to higher productivity appear to require similar multiple simultaneous innovation which includes land shaping, precisely types of changes where scientists are at a disadvantage and farmers have the edge. By being wrong and so having little or nothing to offer, and by failing to encourage and support farmers' own innovations, professionals have thus unintentionally and unwittingly preserved livelihood potentials for the poor.

Professional neglect has occurred in two other ways. In one way the 'last' things of the poor have received low priority. Whatever is rural, agricultural, small, labour-intensive, used by or important for women, dirty, smelly and low status has received rather little attention from research or extension. So until the 1970s multi-purpose trees, cassava, sweet potatoes, yams, bees and goats were not

often priorities; and donkeys, though valuable means to rural livelihoods, seem still beyond the professional pale.

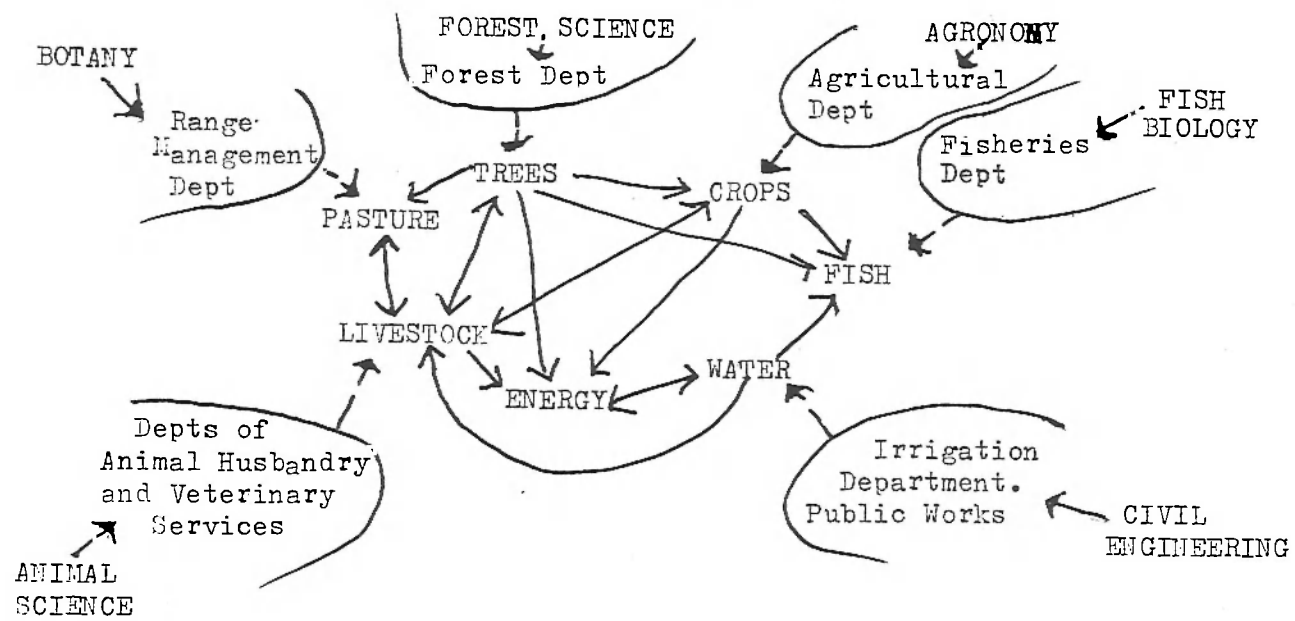
In another way, normal professionals have neglected the gaps and linkages between the central concerns of their different disciplines. This is best shown diagrammatically, in the figure.

Professions and the Government Ministries and Departments which preserve and accentuate their specialisation, focus quite narrowly, overlooking linkages which are often of importance for resource-poor farmers. Agroforestry, meaning the interaction of trees and crops and/or livestock, is a classic example where agronomists are concerned with crops, not trees or livestock; animal husbandry specialists are concerned with animals, not crops or trees; and foresters are concerned with trees, not crops or animals, and moreover trees in forests rather than on farmers' lands. And once again, this professional neglect presents opportunities for the poor. Precisely because the linkages have received little attention, their potential has not been much exploited; and because it has not been much exploited, it has not yet been appropriated by those who are richer and more powerful.

c. errors of policy

Policy errors have also concealed and protected potentials. Regulations prohibiting cutting trees on private land have deterred smallholders from planting trees: the other side of the coin is the potential for planting that can be released when the restriction is removed, as happened on an astonishing scale in Haiti (Murray 1984, 1986). Oversupply of irrigation water on canals in Uttar Pradesh in India leads to waterlogging which inhibits exploitation of groundwater for a much more productive agriculture. In many countries, low agricultural prices have been inadequate incentives and rewards to induce and enable farmers to gain adequate livelihoods from cultivation and animal husbandry. When resource-based secure livelihoods are taken as the prime objective, it is possible to see how changes in policy can release and realise such potentials.

Professions, Departments, Interactions and Gaps



The gaps are represented by most of the lines in the centre

With all these protected potentials the opportunity for the poor depends on who gains from the new productivity. Because these gains have not yet been appropriated by the rich, there is a chance for the poor. But the closest commitment and attention are vital to ensure that those who gain most are the poorer, and not once again the less poor, the rich, the businessmen, bureaucrats and politicians.

#### Policy Implications

The policy implications of this analysis are many, and many of them concern on-going conventional work of government departments, NGOs and professionals. But three groups of policy implications deserve to be given special attention because they go straight to the heart of the matter. They are: policies for sustainable livelihood security; support for the new professionalism; and rural research and development.

The details will vary according to conditions. To illustrate, some examples can be listed under each heading.

#### i. policies for sustainable livelihood security

- redistribution of land to the landless
- transforming tenancy and sharecropping into inheritable rights to land
- allocating degraded Forest land to poor households for growing trees and where appropriate for growing crops and grazing animals
- preserving access by the poor to common property resources, or ensuring that they are the main beneficiaries of privatisation
- managing the commons for higher productivity equitably shared
- reinforcing livelihood strategies by supporting diversification, including non-agricultural activities
- good prices for the crops and animals of small and marginal farmers
- maintaining prices for whatever poor people sell at bad times (jewellery, livestock, wood, charcoal, honey, fish etc) when conditions deteriorate or at the most difficult times of the year

- removing restrictions on cutting trees on private land

ii. support for the new professionalism

The new professionalism which is needed reverses many of the ways of thinking, values, methods and behaviours of normal professionalism. It starts not with population, resources, environment, or development, but with poor people and their needs and priorities. This requires:

- changes in curricula, training methods, professional rewards and incentives, the selection of technical assistance personnel, and criteria for promotion
- changes in career patterns, with more time (especially early and late in careers) spent in the field working and learning with poor rural people
- strengthening 'gap' institutions like ICRAF (the International Council for Research in Agroforestry, in Nairobi) and IIMI (the International Irrigation Management Institute, in Sri Lanka) which direct professional expertise to neglected gaps, linkages and potentials important to poor rural people. (Both these institutions are vulnerable to being underfunded and too small because their concerns (trees in farming systems, management in irrigation systems) are not mainstream normal professional subjects but lie in the gaps between them)
- starting new institutions for other gaps, such as exploiting the energy crisis to generate rural livelihoods.<sup>2</sup>

iii. research and development by rural people

To generate and enhance sustainable livelihoods, especially in resource-poor environments, requires new approaches to rural research and development, shifting the initiative to rural people themselves. Some thrusts are:

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2. The energy crisis has been seen more as a problem of the urban and rich than as an opportunity for the rural and poor. Chapter 7 ('Energy: Choices for Environment and Development') of the Brundtland Commission Report (WCED 1987) for all its valid 'normal' analysis, only twice, in passing, mentions benefits through employment generation (p.193 - as one of four benefits from the Brazilian fuel alcohol programme) or labour-intensity (p.194 on renewable energy systems). Yet growing and selling fuelwood, making charcoal, selling roadside wood for producer gas locomotion and so on, appear to offer massive opportunities for adding to rural livelihoods, especially in labour-slack dry seasons.



- improving the methods and practices of enabling poor rural people to analyse their conditions, needs and resources, and specify their priorities for outside research systems
- encouraging and supporting small farmers' and pastoralists' own experiments, especially with multiple simultaneous innovations with long gestation investments such as trees
- gaining a better understanding of conditions in which poor rural people can and will invest and save, and how they use their investments and savings (e.g. in livestock or trees)
- working with communities to enable them to devise and test new approaches for managing their resources

In all these, rural people are themselves the major actors and professional partners for outsiders; and outsiders' calibre, commitment and continuity are crucial.

#### Concluding Paradox

The conclusion is a paradox: that population control, sustainable resource exploitation, environmental conservation, and rural development are all best served not by starting with them in a normal professional and departmental way, but by starting with people - the rural poor - and what they want and need. Normal professionals, their analysis and prescriptions, are not the solution but the problem. New professionals who reverse normal thinking, values, methods and behaviour can do better, getting closer to the poor, learning their priorities, and enabling them to gain sustainable livelihoods. It is precisely sustainable livelihoods, with secure rights and ownership, which can integrate what poor people want and need, with what those concerned with population, resources environment, and rural development seek. Rural people are then not the problem but the solution. Reversing normal professionalism to put the poor first is the surest path to sustainable rural development.

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